LISTING OF THE CLAIMS

1. (currently amended) Apparatus for detecting ice accretion comprising an electromagnetic radiation emitter and a[[n]] corresponding array of sensors that is closer to the emitter than any other emitter, the emitter being located intermediate of the corresponding array of sensors and at least some of the sensors being located at different distances from the emitter.

2. (original) Apparatus as claimed in claim 1 in which the sensors are substantially symmetrical about the emitter.

3. (original) Apparatus as claimed in claim 1 in which the array of sensors comprises a first set of sensors and a second set of sensors, the first and second sets of sensors being arranged to follow respective paths generally away from the emitter.

4. (original) Apparatus as claimed in claim 3 in which the sets of sensors are arranged in respective radial paths.

5. (original) Apparatus as claimed in claim 3 in which the array of sensors further comprises third and fourth sets of sensors, the first, second, third and fourth sets of sensors together forming a substantially cruciform arrangement of sensors about the emitter.

6. (original) Apparatus as claimed in claim 1 in which the array of sensors is substantially flush with a surface in which the array is mounted.

7. (original) Apparatus as claimed in claim 1 which is an apparatus for detecting ice accretion on an aircraft surface.

8. (currently amended) A method of monitoring ice accretion comprising emitting an electromagnetic radiation signal from an emitter, detecting diffused radiation which comprises radiation which is scattered and/or reflected by a layer of accreted ice, detection of the diffused radiation being effected by a[[n]] corresponding array of sensors that is closer to the emitter than any other emitter, at least some of the sensors being at different distances from the emitter, and the method further comprising comparing detected intensity of the diffused radiation at a particular distance from the emitter to a respective predetermined value so as to determine the type of accreted ice.

9. (original) A method as claimed in claim 8 which comprises comparing the detected intensity of the diffused radiation at different distances from the emitter to respective predetermined values so as to determine the type of accreted ice.

10. (original) A method as claimed in claim 9 which comprises determining whether the detected intensity of

diffused radiation at a particular distance from the emitter is above a predetermined threshold value.

11. (original) A method as claimed in claim 9 which comprises determining the type of accreted ice in response to which sensors at different distances from the emitter detect scattered and/or reflected intensity of diffused radiation above respective predetermined threshold values.

12. (original) A method as claimed in claim 8 which comprises selecting a look-up table of detected intensity values of diffused radiation and ice thickness values in response to the determined ice type.

13. (original) A method as claimed in claim 12 which comprises determining ice thickness by locating a value of ice thickness in the respective look-up table which corresponds to a detected intensity of diffused radiation at a particular distance from the emitter.

14. (original) A method as claimed in claim 13 which comprises using the value of detected intensity of diffused radiation which corresponds to a sensor position which is closest to the emitter to determine the ice thickness from the look-up table.

15. (currently amended) Data processing equipment for ice detection apparatus comprising comparator means, the comparator means, in use, receiving signals representative of the intensity of diffused radiation which comprises

radiation scattered and/or reflected by a layer of accreted ice, which diffused radiation is detected by an array of sensors, at least some of the sensors being located at different distances from a[[n]] corresponding electromagnetic radiation emitter that is closer to the array of sensors than any other emitter, the comparator means being configured to compare detected intensity of the diffused radiation to a predetermined value and determine whether said value of detected intensity of the diffused radiation is above the predetermined value so as to enable the data processing equipment to determine the type of accreted ice.

16. (original) Data processing equipment as claimed in claim 15 in which the comparator means is configured to compare the detected intensity of the diffused radiation to predetermined values and determine whether said values of detected intensity of the diffused radiation are above the predetermined values so as to enable the data processing equipment to determine the type of accreted ice.

17. (original) Data processing equipment as claimed in claim 16 in which the comparator means is configured to compare detected intensity of diffused radiation at different distances from the emitter to respective predetermined values.

18. (original) Data processing equipment as claimed in claim 17 in which the comparator means comprises multiple comparators, each comparator being input with a signal which

is representative of a detected intensity of diffused radiation at a respective distance from the emitter.

19. (original) Data processing equipment as claimed in claim 18 in which each comparator is configured to compare a received detected intensity of diffused radiation to a respective threshold value.

20. (original) Data processing equipment as claimed in claim 19 in which outputs of the comparators are indicative of the type of the accreted ice.

21. (original) Data processing equipment as claimed in claim 20 in which the outputs of the comparators are input into a logic array, the logic array being configured to output a binary number which is indicative of the type of the accreted ice.

22. (original) Data processing equipment as claimed in claim 15 which comprises a memory which stores look-up tables of detected intensity values of diffused radiation and corresponding ice thickness values for different ice types.

23. (original) Data processing equipment as claimed in claim 22 which is configured to select a look-up table in response to the determined ice type.

24. (original) Data processing equipment as claimed in claim 23 which is configured to determine ice thickness

by locating an ice thickness value in the look-up table which corresponds to a detected intensity of diffused radiation.